Illinois ITS/CVO
Electronic Credentialing Business Plan

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ACKNOWLEDGEMENTS

The authors of this plan wish to express their appreciation to all the Illinois State agency and motor carrier representatives that unselfishly gave of their time to contribute to the success of this planning effort. Without their willingness to provide input, guidance, and feedback throughout the course of this project, the completion of this State ITS/CVO Electronic Credentialing Business Plan would most certainly not have been possible.

The staff at Booz·Allen & Hamilton wish to extend special thanks to Mr. Kevin Sharpe, Illinois Commerce Commission, for his vision, participation, and patience, and to our teammates, SEA Group, and Mr. Steve Wermcrantz, for their superlative support.

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1.O EXECUTIVE SUMMARY

The deregulation of the trucking industry led to exponential growth in the number of carriers hauling freight across the US. As a result, it also made the monitoring of fleets and the enforcement of laws and regulations more challenging than ever. The work associated with administering these commercial vehicle programs has, over the years, become increasingly complex and labor-intensive. Nowhere is this more evident than in the state of Illinois.

Illinois is a tremendously popular state for truck registration and operation. A favorable tax code, coupled with a strong customer focus, has led nine of the ten largest interstate carriers in the country to register their fleets there. The economic importance of the Chicago area, and the location of the state along key north-south and east-west trade corridors, contribute to the tremendous level of commercial vehicle traffic plying the state's roadways. Together, these factors place Illinois at or near the top in every major category associated with commercial freight operations.

Ensuring that carriers possess levels of financial and operational responsibility sufficient to protect the state's citizens and roadway infrastructure, and that they pay their fair share for the construction and maintenance of that infrastructure, is of utmost importance. In Illinois, these duties fall to four different agencies: the Commerce Commission, the Department of Transportation, the Secretary of State, and the Department of Revenue.

As is common among governmental organizations, over the years each of these Illinois agencies has, when appropriate and fiscally possible, undertaken efforts to modernize and improve the means by which it performs these duties. In addition to the creation and adoption of reciprocal, or base state programs like the Single State Registration System (SSRS) the International Registration Plan (IRP) and International Fuel Tax Agreement (IFTA), advances in computer technology and periodic process improvements have contributed to this progress. This project was undertaken to carry this one step further.

The concept of creating an electronic one-stop system, through which the exchange of information and payment necessary to administer regulatory programs, registration, fuel tax, and over-dimensional permitting, was first broached as part of the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991. This funding measure offered states, including a seven-state consortium that included Illinois, an opportunity to explore the application of modern computer and telecommunications technologies to these activities. The lessons learned during that project, the Midwest Electronic One-Stop System Operational Test, served as the foundation upon which this business planning project was based. Furthermore, some of those states have already initiated

projects that offer web-based credentialing services to the commercial vehicle community.

Over a period of nine months, the four Illinois agencies worked together in an unprecedented manner to identify improvements to the processes by which these programs are administered, and to establish the functional and programmatic requirements for the development and deployment of a one-stop system in the state. The results of this effort are detailed in this *State ITS/CVO Electronic Credentialing Business Plan*.

Supported by a team of contractors led by Booz·Allen & Hamilton, the first major activity undertaken was the reengineering assessment of the commercial vehicle business processes within each of the agencies. This was accomplished in two phases. First, the current processes were mapped graphically, and problem areas were identified. Next, new processes that would correct current process deficiencies, and employ modern computer and telecommunications technologies, were developed and mapped graphically. Data to support both phases were gathered through interviews, focus groups, and workshops with state, carrier, and third party licensing agent representatives.

Once this was complete, the agencies worked together to define the functional and architectural characteristics of an electronic one-stop system (EOSS). Through a series of focus groups and a workshop, a conceptual system was defined, and the basic requirements for defining and exchanging information were identified. These characteristics include the hardware and networking needs, and the conceptual functionality of the software applications that will be developed to process and manage the information.

Upon execution of this plan, the participating agencies would like to have available for use a web-based, fully-integrated hardware and software solution that will allow motor carriers and third party agents the ability to apply for and remit payment for credentials and permits necessary to operate commercial vehicles in Illinois. Customers will be presented with a single interface, accessible from any web-enabled device, through which they can execute a substantial portion of their business with the state.

In addition, the system will allow agencies within Illinois to access important information about carriers registered and operating within its borders. One of the goals of this effort is to make information available to enforcement officers at the roadside. The conceptual design and programmatic provisions to make this happen are included in the plan.

The agency representatives leading this effort recognize that the funding necessary to complete development, testing, deployment, and operation of the proposed system

represents a substantial, yet worthwhile investment. The efficiencies gained through its use are expected to significantly improve customer service, while simultaneously enhancing the state's ability to ensure safe, legal commercial vehicle operations.

The end goal is that, by late 2002, carriers that base their operations in Illinois, or have a need to obtain credentials or permits to operate in the state, will have the option of obtaining them in the most efficient, cost-effective way, and that the agencies charged with overseeing their operations will have easy access to the information necessary to do so. The EOSS Steering Committee consisting of representatives from each agency and showing a strong example of interagency and motor carrier industry support, stands committed to continued support for the development and deployment of this system.

Conclusions

The findings gathered during the stakeholder interviews, focus group session and workshop suggest that a number of steps need to be taken to maintain the forward momentum of this project, and to support timely development of an interactive web site that is responsive to the needs of the Illinois commercial vehicle industry. Those steps include the definition and assignment of project management responsibilities, detailed design activities, and implementation tasks.

Since the early 1980's, carriers have been forced to continually search for ways to contain and reduce costs in order to remain competitive. Electronic credentialing is seen as an effective solution that enhances vehicle and freight management practices. Currently, commercial vehicle registrants must complete detailed, and often repetitive, credentialing applications needed to secure proper registration documentation. Each separate regulatory agency application demands similar carrier and vehicle information. Every application format is unique and entails entering similar but not matching vehicle data fields.

Stakeholders believe that the creation of a common demographics database will serve to improve unique carrier identifiers across multi-agency databases. It will also significantly reduce the repetitive data entry requirements carriers encounter when applying for multiple credentials within the state of Illinois. Further, carriers that participated in this project believe that because their official registration database is the credentialing database maintained by each of the Illinois regulatory agencies, the maintenance of a duplicate database on their systems represents unnecessary duplication of effort.

These factors are among a number of issues addressed during the execution of this project that lead to the conclusion that an electronic credentialing system—one that allows carriers to transact credentialing operations via electronic data transfer with state

agencies—should be pursued by the state. The general consensus reached by the project stakeholders, which included agency and carrier representatives, was that the final system should be Web-based, and provide automated interface with existing systems.

The EOSS mission is to strike a balance between the public's need for financially responsible and safe trucking operations, and minimal interference with the market forces that drive today's fast paced trucking industry. The Illinois EOSS project team believes this can be done through the use of technology with industry and government working in partnership.

2.O INTRODUCTION

2.1 BACKGROUND

2.1.1 The Motor Carrier Industry

Dramatic changes have taken place in the motor carrier industry since the advent of deregulation in 1980. These changes have significantly altered the motor carrier population within the United States. The removal of barriers to interstate operation, coupled with changes in the regulatory environment, has resulted in explosive growth in for-hire trucking. The once rigid, heavily restricted atmosphere has given way to one that places a premium on competitiveness.

In the years since, the competitive nature of the industry has intensified. Customers have become increasingly demanding, and the adoption of integrated logistics and supply chains, and processes like Just-In-Time (JIT) manufacturing, have compelled carriers to constantly reassess and adjust their operations. Specifically, carriers have been forced to continually search for ways to contain and reduce costs in order to remain competitive, while simultaneously improving service.

The more successful carriers have managed to gain efficiencies by continually improving the way they interact with their customers, and doggedly pursuing the containment of internal costs. Using a combination of smart practices, and the practical application of technology, these carriers continue to strive to improve profitability. The formation of strategic alliances, in the form of supply chains and demand chains, among others, has offered many firms the opportunity to improve asset utilization. From a technology standpoint, the National Finance and Accounting Council estimates that 77 percent of all motor carriers are now using some form of electronic data interchange (EDI) for invoicing, while 55 percent use it to help manage their accounts receivable.

Each year, an average for-hire trucking company expends more than 2 percent of its total operating revenue on taxes and licenses—an amount roughly equivalent to the average commercial carrier's profit margin. This figure doesn't include the cost of labor expended in filing the necessary forms and completing the other administrative tasks involved in credentialing and permitting. For the typical fleet, this can involve adding or deleting vehicles from its fleet, adjusting the apportionment of mileage among the states in which it operates, and, for regular haulers of over-dimensional loads, the renewal of annual permits, and

"Each year, an average for-hire trucking company expends more than 2 percent of its total operating revenue on taxes and licenses—an amount roughly equivalent to the average commercial carrier's profit margin."

acquisition of trip permits. Perhaps even more significant is the fact that the information carriers must supply to obtain these credentials and permits from each of the responsible agencies is very similar. The result is the repeated provision of redundant information. For carriers in good standing, these processes represent a significant expense that begs for improvements in efficiency.

While the situation can be quite different for new carriers, carriers changing base states, or carriers that have experienced safety or financial difficulties, there still exists an opportunity for the enhancement of administrative processes. This is especially true if the time saved administering to the needs of the carryover fleets could be applied to the management of these requirements.

2.1.2 Commercial Vehicle Administration

Commercial vehicle administrative processes consist of all activities and transactions that must take place in order for commercial vehicles to legally operate on the nation's roadways. Included in this definition are vehicle registration, carrier operating authority, fuel tax registration, and reporting and permitting for the movement of over-dimensional vehicles and hazardous materials. These processes serve three distinct purposes: ensuring the *safety* of the motoring public; providing for the protection of public *assets; and c*ollection of *revenue* for infrastructure construction and maintenance.

2.1.3 Ensuring the Safety of the Motoring Public

Approximately 7 million heavy trucks, including some 4 million tractor trailers, are currently in operation on the nation's roadways. Each year, they log in excess of 200 billion road miles. In Illinois, commercial trucks move over 47 billion ton-miles of goods per year. Three different credentialing and permitting processes contribute to ensuring the safety of motorists in the state.

The first is the issuance of vehicle registration, under programs such as IRP. Registration provides a means for enforcement personnel to identify the vehicle and its owner for the purpose of safety fitness laws. The second is the issuance of operating authority to the trucking company, who is ultimately responsible for exercising supervision and control of the trucking operations. Because the authority to operate commercial vehicles is contingent upon a continuing demonstration of safety fitness and financial responsibility, in theory, unsafe carriers should have more difficulty retaining authority, in part because their insurance premiums are higher. Unlike regular motorist insurance, commercial truck public liability insurance ensures those parties responsible for bodily injury and property damages have appropriate resources to cover these expenses as a condition of the license. Finally, carriers transporting over-dimensional loads must obtain a permit. These permits are issued only after review of

the characteristics of the vehicle and cargo, and the review and approval of a pre-defined route.

2.1.4 Providing for the Protection of Public Assets

" Well-maintained roadways are also a fundamental requirement for the fast, efficient, and safe transport of commodities critical to economic prosperity."

Roadways and bridges represent both a substantial investment and a critical economic enabler. Many of the nation's roadways and bridges are in disrepair, and in need of significant reconditioning or replacement. The costs associated with the installation and maintenance of our nation's transportation infrastructure routinely constitute a sizeable portion of state budgets. Well-maintained roadways are also a fundamental requirement for the fast, efficient, and safe transport of commodities critical to economic prosperity. In Illinois, where there are 137,413 miles of interstate and state highways, annual highway infrastructure expenditures approach $3 billion. Two separate commercial vehicle credentialing and permitting processes serve to provide for the protection of these expensive investments of public funds.

Operating authority, as was discussed earlier, is contingent, in part, upon the possession of adequate insurance coverage. Claims filed against this coverage serve to defray the costs of roadway repair in the event of an accident. Over-dimensional permitting is an additional protective measure. By carefully reviewing permit applications, permitting agents minimize the likelihood of damage to expensive highway assets like roadway surfaces and bridges.

2.1.5 Collection of Revenue for Infrastructure Construction and Maintenance

The financial burden associated with the construction and maintenance of Illinois roadways is considerable. As with other states, Illinois must rely on fuel tax revenues to perform these critically important functions.

The capture and reconciliation of fuel tax receipts with other states is the primary means by which states ensure that commercial vehicles using their roadways are helping to fund construction and maintenance. According to the 1999 Annual Report issued by the Illinois Department of Revenue, $1.25 billion in revenue was generated through state fuel taxes. The FHWA Highway Statistics report indicated that, in 1999, an additional $431 million (7.3%) was collected in motor fuel taxes.

This underscores the common thread that runs through the different credentialing and permitting processes: though each is administered independently from the others, the end result is a matrix of critically important public protections and services.

2.2 APPROACH

The approach employed during this project consisted primarily of three major components: 1) business process reengineering, 2) system conceptual design, and 3) institutional coordination and consensus building. The business process reengineering (BPR) component was conducted to explore alternatives to existing credentialing and permitting business processes. The system conceptual design activities were aimed at defining the operational and architectural parameters within which detailed system design could be undertaken. Finally, and perhaps most importantly, inter-agency, and agency/carrier consensus building served as a means to arrive at a combined technical and programmatic solution that could enjoy the support of, and hence the use by, the industry and government entities for whom it is intended. A graphical depiction of the overall project approach is provided in Exhibit 1.

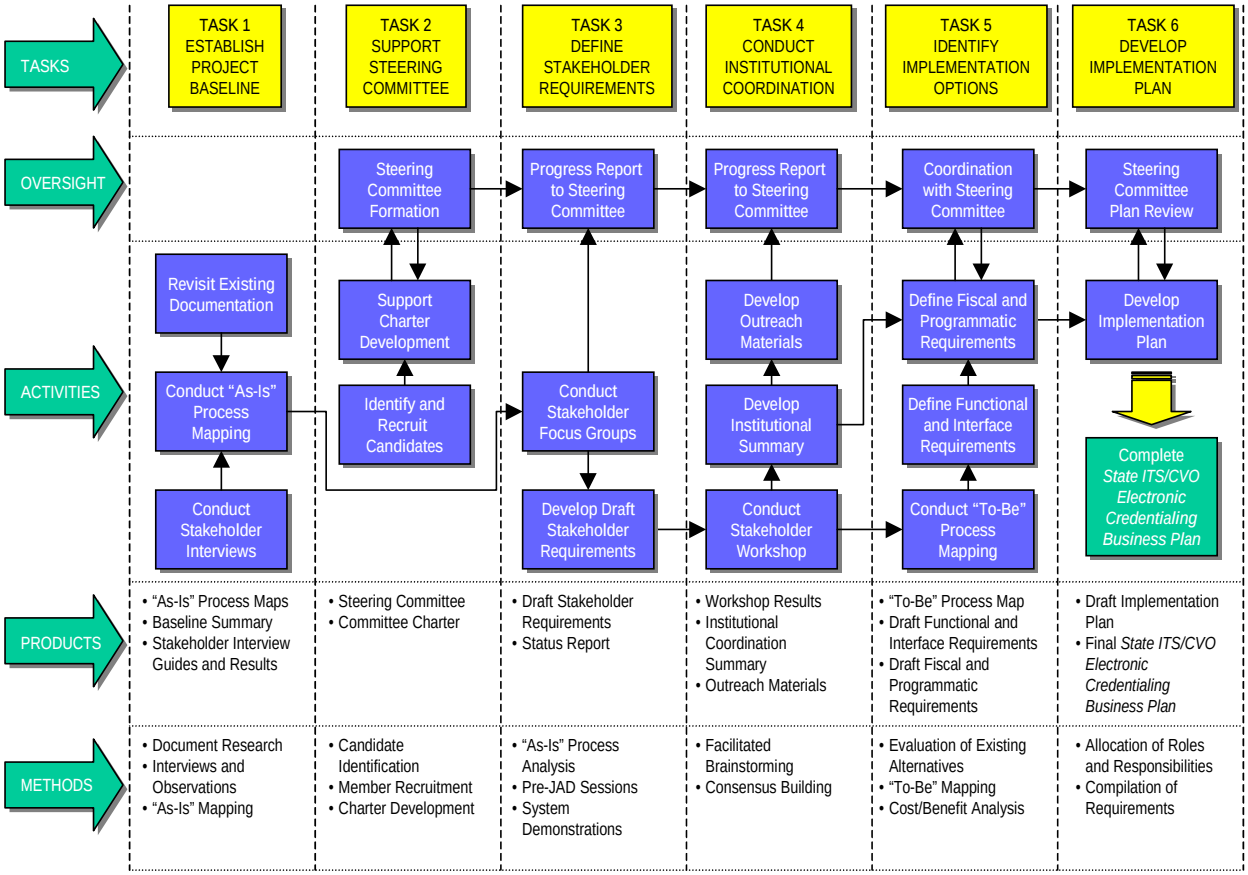
The process began with the establishment of the baseline conditions, both within Illinois, and in the surrounding states and across the U.S. Prior to the development of the baseline, a project steering committee was established, and coordination with the committee, the stakeholder body in the state, and the external environment was begun. The committee membership included representatives from each of the following organizations:

- Illinois Department of Transportation
- Illinois Commerce Commission
- Illinois Department of Revenue
- Illinois Secretary of State
- Illinois Movers and Warehouseman's Association
- Midwest Trucker's Association
- Illinois State Police

Part of the baselining activity consisted of the documentation and close examination and assessment of the processes by which credentials and permits are applied for and issued. This activity, typically called "As-Is" process mapping, provided a systematic means of analysis of processes at the component levels, which allowed for a thorough analysis of what works, and what could be improved.

Using a modified BPR methodology, the project team worked with process owners (Commerce Commission, Secretary of State, Department of Revenue, Department of Transportation) to map the current processes, and developed alternatives that offered improvements in one or more critical performance areas, as defined by the project steering committee. Once a draft set of process improvement targets was defined, the team worked closely with the steering committee and key stakeholders to establish the consensus necessary to effect the proposed changes.

EXHIBIT 1
Project Process Overview



After completion of the BPR process, the project team conducted Focus Group sessions with process owners and key stakeholders to identify options for the automation of selected processes. As part of this activity, the information necessary to develop system functional requirements and basic interface specifications for legacy system interoperability was gathered.

Finally, based on the cooperative development activities undertaken throughout the project, the team developed an implementation plan. The plan defines the process reengineering, institutional reform, and technology implementation initiatives agreed upon by the stakeholders, and the means by which they will be completed.

3.0 CURRENT OPERATIONS OVERVIEW

3.1 IRP REGISTRATION

3.1.1 Organization

Interstate commercial vehicles legally based in Illinois must be registered under the International Registration Plan (IRP). The Office of the Secretary of State Commercial and Farm Truck Division administers IRP in Illinois. The IRP is a registration reciprocity agreement among jurisdictions in the United States and Canada, which provides for payment of license fees on the basis of fleet miles operated in various jurisdictions. The unique feature of the IRP Plan is that, even though license fees are paid to the various jurisdictions in which fleet vehicles are operated, only one license plate and one cab card is issued for each fleet vehicle when registered under the Plan. A fleet vehicle, so far as registration is concerned, may be operated both inter-jurisdictionally and intra-jurisdictionally.

The IRP Unit has a full time staff of 40 people and a part time staff of 13 to 15 people. The Unit has twenty-five to thirty wire service companies that issue to established IRP accounts in good standing and about 30 companies, with more than 500 vehicles, who self issue their own permits. The IRP registration cycle in Illinois is April 1 through March 31 each year and the renewal period extends from December until March.

In order to accommodate the higher volumes of walk-in traffic during renewals, the unit moved the walk-in process to the rear of their processing area. During the renewal period, the unit requires carriers to make appointments for walk-in assistance in order to effectively manage counter volumes each day. In 2000, the Secretary of State issued 172,928 IRP credentials to Illinois based carriers.

3.1.2 Process

In June of each year, the IRP Unit begins the process of preparing for the next years' registration renewal period. Renewal applications are mailed to registrants during the month of December. The applications consist of computer-generated sheets that list the carrier and vehicle level detailed information for each weight group in the fleet. The application is accompanied by relevant information updates that may be needed by the carrier in order to complete their application.

The carrier reviews each application received and adds, removes, or modifies the data for each vehicle listed in each weight group. Mileage records are updated using the period of July 1 through June 30 immediately preceding the renewal period. Estimated mileage is recorded if the carrier has not operated in the newly added jurisdiction

during the mileage period. If new vehicles are added to the fleet, vehicle ownership documentation must accompany the renewal application.

Upon receipt of the renewal application and attached documentation, the IRP Unit begins the process of reviewing the contents of the renewal submission. The application's contents are evaluated to determine whether all required information has been submitted. If any omissions are discovered, the carrier is contacted, either by telephone or mail, to rectify the omission. Complete applications are approved for data input and subsequent fee calculation processes.

Once the application and fee process has been completed, invoices are generated and mailed to the carrier. The carrier, after verifying that the billing amount reflects the application submitted, then mails sufficient funds to the IRP Unit to satisfy the invoice. Upon notification that the appropriate funds have been received by the State, the IRP Unit satisfies the invoice and generates renewed credentials for the carriers' fleet(s).

Supplemental applications are filed by the carrier, as needed, in response to adds and deletes of equipment or for operational changes affecting registration credentials.

3.1.3 Systems

The IRP system resides on an IBM mainframe at the Illinois Secretary of State (SOS). IRP is a COBOL IMS application that runs on the IBM mainframe. The IRP System uses a DB2 database that runs on the IBM mainframe and is accessed via PCs that execute in a Windows environment. Access to the DB2 database is across a Novell 5.0 Local Area Network (LAN) at SOS.

The IRP system does not have an outside firewall at SOS so that it can be accessed from staff outside of the office via a dialup modem. The system access is controlled by a username and Pin # at logon time to access the IRP software on the PC and the DB2 database. Data residing on the DB2 database is not confidential. The system contains public information, however there is a 15-day waiting period because notification is required before release of information.

IRP does not receive external updates from automated systems. The System distributes money to other States as net differences are identified. Twice a month it also receives net adjustments for Illinois fees that are due – approximately $100 M to $140 M annually.

The system requires the use of Federal Employer Identification Number (FEIN) and/or Social Security Number (SSN) as the primary keys for entry and retrieval of data. The system contains fee tables for other states that are stored in the database as reference tables.

The annual IRP registration year runs from 1 April to 31 March. High volume periods fall between January and April, with moderate volumes for adding and deleting transactions throughout the remainder of the year.

The IRP database maintains records on approximately 14,000 companies and 16,000 fleets that register 178,000 power units and 162,000 trailers yearly. Basic statistical information for the Secretary of State's database is as follows:

- IRP Master is 652 bytes long (each record)
- 1,292,627 records
- the 2000 transaction volume was 430,874

3.2 IFTA REGISTRATION AND FILING

3.2.1 Organization

The International Fuel Tax Agreement (IFTA) is a base jurisdiction motor fuel use tax agreement in which the base jurisdiction administers motor fuel use taxes for all IFTA jurisdictions (all contiguous United States and Canadian provinces), and apportions payments to those jurisdictions. Illinois based carriers operating qualified motor vehicles in interstate commerce must register and comply with the IFTA program requirements. Qualified motor vehicles are defined as those having two axles and a gross vehicle weight or registered gross vehicle weight exceeding 26,000 pounds, or, having three or more axles regardless of weight, or, used in a combination and the weight exceeds 26,000 pounds.

The motor carrier's registration is authorized for one calendar year, with a grace period for previously registered carriers from January 1 through February 28 to affix the decals. After registration, the carrier is responsible for filing quarterly tax returns detailing the miles traveled and gallons purchased in each jurisdiction.

In Illinois, IFTA is administered by the Department of Revenue (DOR), Excise Taxes Bureau. The processing section has a full time staff of 12 people, with a seasonal part-time staff of 8 employees. In addition, six (6) staff members from other areas of the Department (Audits, Investigations, Accounting) access the system for inquiry only. During the 2000 calendar year, the DOR issued 196,152 IFTA credentials to Illinois based carriers.

3.2.2 Process

A new motor carrier either mails or phones in a request for a blank application. A carrier previously registered with Illinois IFTA, and in good standing, will receive a

computer generated pre-printed application each October. The carrier completes the application, including the order for the number of decals requested, and submits the application and payment for the decals to the IFTA section. Decals are $3.75 per set. One set of decals must be affixed to each qualified vehicle in an account's fleet.

Upon receipt of the application, the IFTA section reviews the contents to determine that all information required has been submitted, and that it has been properly signed. The carrier is notified by telephone or letter of any missing information. Applications are input into the department's contractually licensed software system (the Polk system), where on-line edits are performed to identify if all returns are filed, or if the taxpayer has outstanding liabilities. The decal fees are calculated for the number of decals requested, and payments are posted. The license is printed at the department. The system identifies the next available serial number from the decal inventory, and assigns these numbers to a specific carrier. The license and decals are mailed to the carrier, or physically given to walk-in carriers in Department of Revenue lobby locations.

Quarterly returns are printed each quarter, thirty (30) days before the due date. The Polk system identifies any outstanding credits, or liabilities, and prints this amount on a specific line of the return. At the same time, the tax rate matrix for the current quarter is downloaded from the IFTA Inc web site. Hard copies are printed and mailed with the return to the taxpayer.

The taxpayer must detail all miles traveled and gallons purchased for each fuel type in each IFTA jurisdiction for the quarter to be filed. Taxes are calculated on the net gallons in each jurisdiction. The taxpayer pays or is credited/refunded the net amount. The carrier completes the return, signs the form and mails it to the IFTA section accompanied by the required payment, if applicable.

Upon receipt of the return, the envelope is retained for proof of postmark. The IFTA staff enters the data into the Polk system. In addition to calculating the correct tax rates, the system performs many math calculations and systemic edits.

The IFTA Section is required to enter data from all returns 30 days from the postmark date to be in compliance with the International Fuel Tax Agreement. A transmittal is generated from the system on the last day of each month, detailing for each jurisdiction the miles and gallons reported by the Illinois carriers. The accumulation of data represents the amounts that should be apportioned to the individual jurisdiction.

3.2.3 Systems

The IFTA system resides on a server at DOR. The system consists of a commercial-off-the-shelf (COTS) product developed by R. L. Polk. It is a standard product used by

states to assess and track the distribution of highway taxes. The Polk System uses a DB2 database that runs on a Pentium Compaq File Server. The Polk system is a PC application that executes in a Windows environment. It uses an open database connectivity (ODBC) connection to access the DB2 database on the File Server. Access to the DB2 database is across a Novell 5.0 LAN at DOR.

The Polk system is protected from the outside by a firewall at IDOR and a firewall at Central Management Services (CMS). System access is controlled by requiring a username and password at logon. Data residing on the database is subject to certain non-disclosure laws and policies of the department.

IFTA does not receive external updates from automated systems. It does contain other states tax tables that are stored in the database as reference tables. The system requires use of FEIN and SSN as keys for entry and retrieval of data.

The Polk System has three main screens that perform the following functions.

- Initial Registrations
- Quarterly Estimates
- Yearly Submissions

The database maintains records on approximately 15,000 carriers. Currently all data entry is performed manually by in-house staff. Approximately 373,000 transactions are processed yearly through the Polk system.

3.3 SSRS REGISTRATION

3.3.1 Organization

Thirty-eight states, including Illinois, require interstate for-hire motor carriers of property and passengers to provide information directly to the states pertaining to the carrier companies' Federal Motor Carrier Safety Administration (FMCSA) operating authority. Regulated interstate motor carriers file the information on an annual basis so the carrier's operations can be monitored. For each state they operate in, regulated carriers are responsible for applying for the right to operate, paying per vehicle fees, providing continuous proof of insurance, and identifying a designated resident agent. To make the administration of operating authority more efficient for the states and regulated carriers, thirty-eight states have entered into a cooperative agreement to administer an operating authority program. Called the Single State Registration System (SSRS), carriers may obtain operating authority for any participating states in which they will be active with a single request to the motor carrier's base state. Carriers receive a receipt that documents the states in which they are authorized to operate. Motor

carriers are required to photocopy the registration receipt and place a copy in each of their vehicles. The Commerce Commission (ILCC) administers the SSRS in Illinois.

The SSRS Unit has a full time staff of 8 people. The SSRS registration cycle is January to December and the renewal period is from October through December each year. In 2000, the Commerce Commission issued approximately 125,000 SSRS credentials to Illinois based carriers.

3.3.2 Process

The Commerce Commission provides a simple thirty-eight field application form and mails them to the SSRS registrants. Upon receipt of the renewal application, the carrier completes the application and either mails or faxes the application to the SSRS Unit. The carrier also remits the proper payment for SSRS credentials to the SSRS Unit.

Upon receipt of the renewal application, which may be submitted via e-mail, the SSRS Unit reviews the contents of the renewal application. The application's contents are evaluated to determine whether all required information has been submitted as required. If any omissions are discovered, the carrier is contacted, either by telephone or mail, to rectify the omission. Complete applications are input into the Commerce Commission system where on-line edits are performed. Upon notification that the appropriate funds have been received by the State, the SSRS Unit issues new credentials for the carrier's vehicles.

3.3.3 Systems

The SSRS system resides on a server at the Illinois Commerce Commission (ICC). SSRS is a product developed by the ICC. It is a standard product used by 38 states to ensure that carriers have a current insurance certificate. The insurance certificate certifies the financial stability of insurance companies and binds the insurance company by extreme terms to the carrier. The SSRS uses an SQL Server database that runs on a Pentium Dell File Server. The SSRS system is a PC application that executes in an NT environment, that runs as a terminal service or through MetaFrame to the file server. Access to the database is across a Novell 5.0 Local Area Network at ICC. The database maintains records on approximately 4,000 carriers. The database includes application tables, lookup tables and indexes. The database contains two years of data – after two years the data is archived. The system processes approximately 125,000 transactions yearly. Details on the application can be viewed on-line at www.icc.state.il.us/insurance/ssrs/docs/basedoc.text.

The SSRS system is protected from the outside by a firewall at ICC. The system access is controlled by a username and personal identification number (PIN) at logon time to access the SSRS software on the PC and the database. Data residing on the database is

not confidential – all data is public record information. The system can be accessed from the outside by using PCAnywhere along with a username and password for the Novell network.

The state police currently use Cellular Digital Packet Data (CDPD) wireless technology to access the system from PCs in their patrol cars. There are 8 police vehicles that are accessing the system on a pilot effort. The 8 vehicles generate approximately 2000 inquiries against the database each day. The number of inquiries is expected to increase as the number of equipped vehicles grows. The queries from the roadside require that the officer input the truck number, and the system returns basic demographics and a yes/no response that the truck has current insurance.

SSRS receives external update (state rates) from the Volpe Center (Federal Insurance Center) through a nightly download. Each of the users of the SSRS system downloads the state rates from the ILCC on a daily basis.

SSRS contains 4 main screens that are used for the following functions:

- Initial Registrations
- Quarterly Estimates
- Yearly Submissions

3.4 OS/OW PERMITTING

3.4.1 Organization

The Federal government regulates the size and weight of commercial vehicles on the Interstate highway system. State governments also regulate the size and weight of commercial vehicles on state routes in addition to enforcing the Federal size and weight rules. Oversize and Overweight (OS/OW) permitting is administered in Illinois by the Department of Transportation, Permits Unit. Oversize and Overweight permits allow the operation of vehicles or loads that exceed the legal maximum dimensions and weights. The permitting process is intended to provide for highway safety, and to ensure that low bridges, narrow roads, or construction does not impede loads.

The Permits Unit has a full time staff of 22 people comprising both routine and super load sub-units. In 2000, the Department of Transportation issued 257,000 OS/OW permits to Illinois based carriers.

3.4.2 Process

The customer calls into the Permits Unit when requesting an oversize or overweight permit. Customers requesting super-load permits are required to fax their requests to

the Super Load sub-unit. For routine requests, via telephone or fax, a Customer Service Operator (CSO) completes an on-screen application, analyzes the requested movement detail for acceptability, and prints an OS/OW permit which is then faxed to the carrier. Selected carriers have the ability and authorization to self-issue IDOT reviewed and approved OS/OW permits. If the carrier is a self-issuer, the CSO will provide a permit number to the carrier to record on their self-issued permit. If the CSO determines that the application contains problems, the CSO contacts the carrier to resolve movement issues prior to printing and/or distributing the permit. Acceptable permit payment includes cash, personal check, company check, Certified check, credit card, Comchek plus established Bond Accounts and Escrow Accounts.

Permit requests for movements through the Chicago area take about two weeks turn-around time. Requests from other areas of the state are turned around in about 3 days. There are Single Use Permits (5 days), Round Trip Permits (10 days) Quarterly and Yearly Permits.

3.4.3 Systems

The OS/OW system resides on a mainframe and server at the Illinois Department of Transportation (IDOT). It was developed in-house by IDOT. The OS/OW Permit Unit uses an ***Access*** database that runs on a Pentium Dell File Server and utilizes an RPM database on the IBM 9000 mainframe. The IDOT recently rolled out a Web based permitting application that executes in an NT 4.0 environment. Access to the mainframe is obtained through the XTRA software product. The mainframe application is written in COBOL. Access to the mainframe database from the WEB application is across a Novell 5.0 Local Area Network at IDOT.

The database maintains records on approximately 15,000 carriers. The web server processes approximately 150 permits per day. Records from the Web server are uploaded to the mainframe to determine cost for the permit. Debit/credits are processed on the mainframe against existing accounts. A monthly statement is sent out to show all transactions against the account. The permit is generated at IDOT and is either faxed, mailed or picked-up by the carrier. The system uses WRITEFAX to automatically send out permits.

All data entered on the Web site is Public Record data. The Web server is located outside the IDOT firewall, while the credit card system is located inside the firewall. Once a user has entered their permit request, the customer is provided with a reference number for tracking the progress of the permit. The tracking process is through phone contact – there is no access to the tracking system through the web site.

Normally permit data is entered directly into the mainframe. The same screens are available on the mainframe as on the IDOT web site. The same edits are applied to all

data input screens. Access to the Web application is through a logon account with a PIN. The logon and PIN are provided by IDOT when the carrier's account is initially established.

4.0 PROPOSED EOSS OPERATIONS

At the conclusion of the process reengineering activity, carrier and agency representatives were queried as to what kinds of systems and/or applications they felt would best meet the requirements for credential processing under the new processes. During focus groups held for each of the credential types, participants were asked to provide desired functional, technological, and operational characteristics, within the context of these "To-Be" processes.

General consensus was reached during the focus groups that a Web-based application that would be available to all carriers that enrolled to use it. The sections that follow offer specific characteristics and design imperatives for such a system.

4.1 WEB SITE DESIGN

The Illinois EOSS Operations web site design will make use of an e-business model where electronic transactions and interactions are conducted from a carrier to the regulatory agency and vice versa. The EOSS operational plan will enable the development and deployment of a system that will allow future carrier exchanges of information with the agencies for the administration of credentials, permits, and fuel tax filings via a single web "portal." A 1999 benefits study, conducted by the American Trucking Associations (ATA) Foundation, predicted a benefit/cost ratio approaching 20 to 1 for electronic credentialing initiatives.

Under the concept, carriers, or their agents, will be relieved of the annoyance of redundant data entry, and will be able to pay for their credentials and file quarterly returns on-line. The Commerce Commission's SSRS function will be wholly contained within the web site's functional software. Both the Secretary of State's IRP function and the Department of Revenue's IFTA function will remain within each department. However, each evening, both departments will refresh the web site respective databases and also refresh the common demographics database as necessary. The Department of Transportation's Oversize and Overweight (OS/OW) Permits Unit will make all of their permit data available for both carriers and for roadside enforcement purposes by way of a hyperlink address to their stand-alone registration function.

Using a publicly accessible Internet address, carriers will be able to reach the EOSS web site. The site will be designed to allow users to select various features and functions of the site. The web site will be menu driven and the sequence of screens will be fashioned intuitively. There will be sufficient instructions to enable the user to easily access all information resources. The initial screen will contain selection boxes in order to access various services. There will be selection boxes for 1) general information; 2) Illinois commercial vehicle laws and statutes; 3) descriptions of the four regulatory functions available at the site (IRP, IFTA, SSRS, and OS/OW); 4) Application for a screen name

and PIN number to enable access to the on-line registration functions of the site; and 5) an option to go to a Log-In page in order to access that carrier's registration accounts.

A key design element of the web site will be the creation of a common demographics database that will be used to identify all carriers who are authorized to use the web site. The database will use primary carrier identification fields such as, Business Type (including sole owner; partnership; corporation; and limited liability corporation), Legal Name, and Trade Name or D.B.A. Additional demographics fields to be collected will include the IRP Firm number; Federal Employer Identification Number/Social Security Number; Illinois Commerce Commission Motor Carrier number; Interstate Commerce Commission number; U.S. Department of Transportation number; Telephone number; and for Canadian companies, their Social Insurance Number (SIN).

The Office of the Secretary of State, the Department of Revenue, the Commerce Commission, and the Department of Transportation should all use the web site's common demographics database for all carrier registrations. All authorized Illinois State agencies, including law enforcement, will have access to the site and will be able to select or view various carrier status reports on demand.

Illinois law enforcement presently uses Cellular Digital Packet Data (CDPD) technologies for wireless communications. CDPD is a specification for supporting wireless access to the Internet and other public packet-switched networks. Using a CDPD modem, it is possible for remote users to connect wirelessly to the Internet from almost anywhere in the United States through a CDPD provider. The EOSS site should be configured to accept CDPD technologies. CDPD may also have to be expanded to accept queries from remote agency locations.

When a carrier enters their unique screen name and PIN and selects the type of registration credential desired, the EOSS will retrieve the carrier's common demographics file and the selected carrier registration file. The carrier's staff will be able to access their selected application and enter or modify specific registration data in their own file. The application data entry fields will employ field edits. Edit rules and business rules will be specific by field (e.g., using a corporation rules definition in the business type field). Upon completion of the credentialing application data entry process, the carrier will have the option to either print the application data so the data can be reviewed before submission or click on the submit button to send the application to the agency for further processing.

Upon receiving approval to submit the carrier's credentialing application for SSRS, the EOSS will pass the data to the web site-embedded SSRS program for processing. For IRP and IFTA applications, the EOSS will create a flat file for each application submitted during the previous twenty four-hour period and transmit the files to either IRP or IFTA as required. The IRP and IFTA legacy systems will automatically subject the

applications to final scrutiny before accepting the application for processing. The respective systems will use existing credentialing programs to process the data and generate invoices and/or fuel tax reports. The invoices and/or reports will be transmitted to the carriers via the EOSS mail notification system.

Upon receipt of the credentialing invoice from the EOSS mail notification system, the carrier will have the option of using the EOSS to either pay by credit card or initiate payment through an automated clearing house to electronically transfer funds. The carrier may also elect to print their invoice locally and submit the payment by check, money order, or in person. Obviously, keeping the payment option within the EOSS will be the preferred method since it ensures more expedient processing delivery of credentials.

4.1.1 Future IRP System Considerations

Any future IRP system will utilize the same screens and database as the existing system. The system will interface with the WEB application via on-line access to the SOS database. All processing between the Web application and the existing IRP system will be through a copy of the existing IRP database that would reside on the SOS mainframe. SOS would provide a daily copy of the database that would be accessible from the Web server in an on-line mode. Nightly, SOS would extract the daily transactions from the copy of the database, process the transactions against the master file, then produce a new copy of the database for use on the Web site. The current edits that exist on the mainframe system will be required for each of the screens on the Web site.

4.1.2 Future IFTA System Considerations

Any future system will utilize the same screens as the existing system. The POLK system will be interfaced with the Web application via a flat file that is exchanged nightly. The flat file will contain all carrier fuel tax data in the existing DB2 database. All processing between the Web application and the existing Polk system will be a batch process that is derived from the flat file that is passed back and forth each night. Online users will enter records into the Web application. The flat file will likely be transmitted between the IDOR server and the Web site via a file transfer protocol (FTP). The current edits that exist on the Polk system will be required for each of the screens on the Web site.

The current process of sending out cancellations will continue as is due to the state-mandated requirement that the cancellation notices must be sent via certified mail. This may be changed in the future once electronic notifications have become an accepted means of communications.

4.1.3 Future SSRS System Considerations

Any future system will be expected to utilize the screens similar to the existing system. The system can be migrated entirely to the Web. All processing of the SSRS will be as a Web application. The initial registration, quarterly and yearly submissions will be entered into the Web application by on-line users. The current edits that exist on the SSRS system will be required for each of the screens on the Web site.

4.1.4 Future OS/OW System Considerations

The OS/OW web application will continue to be housed on the IDOT web server. The EOSS server will have a menu selection on the main menu screen that will provide a hyperlink to the IDOT Web Site. No demographic data will be entered on the EOSS web site for transmission to the OS/OW web site.

4.2 ANTICIPATED ILLINOIS EOSS PARTICIPATION LEVELS

In an effort to gain some concept of possible participation levels of carriers who may elect to use the Illinois EOSS web site, the project team examined participation levels at a similar web site recently created by the State of Virginia. In the fall of 1999, the State of Virginia conducted a Motor Carrier Customer Satisfaction Survey by contacting randomly selected carriers by telephone. The telephone survey interviewed 617 representatives of Virginia based motor carriers who have the responsibility for filing motor carrier forms and reports.

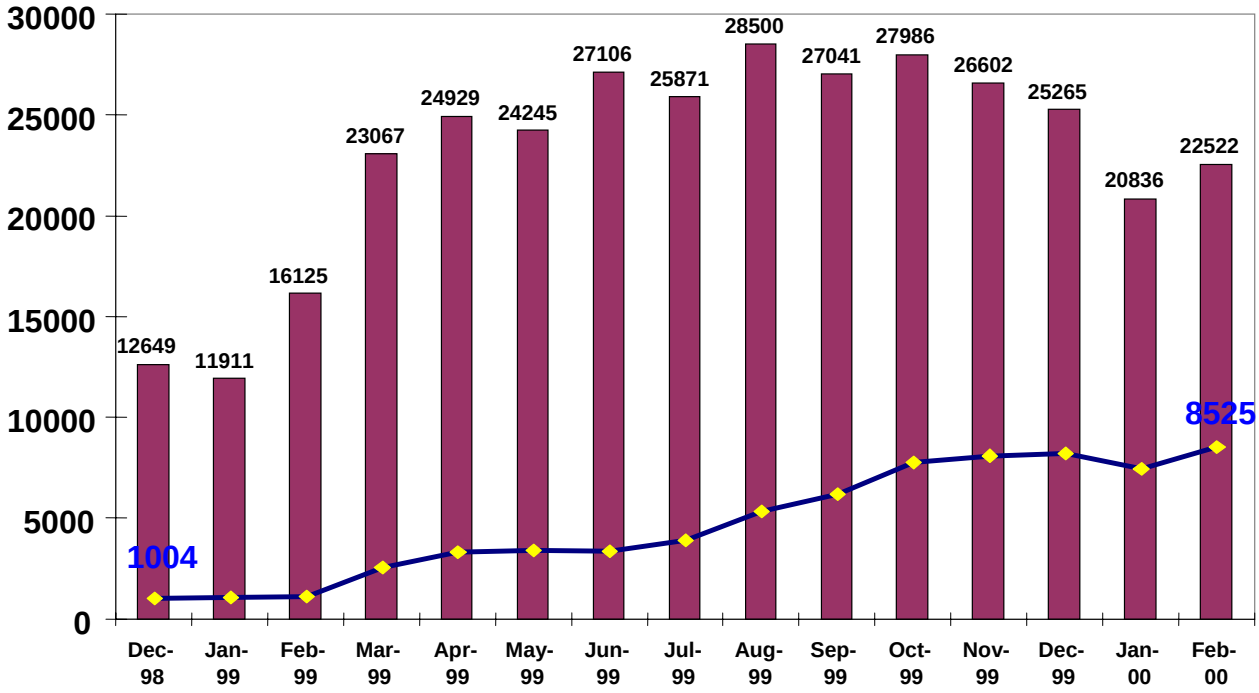
The two Internet services investigated involved IRP and IFTA transactions. For IRP, the respondents, who have access to the Internet through their employer, were asked, "How likely are you to make IRP transactions, including applications, payments and receiving information, through the Internet?" The top box scores (*very likely* or *somewhat likely*) for IRP and IFTA transactions were 31.1% (192 carriers) and 35.4% (218 carriers) respectively.

In order to assess Virginia's participation results, we examined a similar commercial vehicle web-based registration system in Pennsylvania. Pennsylvania has evaluated the number of all applications submitted compared against web applications submitted during a fourteen month processing window. Their web user statistics, generated using their Automated Permit Routing Analysis System – (APRAS) program, reflected an increase of 7,541 applications (25.3%) in the overall number of web submitted applications during the study period. This data collection activity underscores the increasing acceptance and use of web-based applications by motor vehicle registrants.

These results, shown in Exhibit 2, suggest that Internet transactions remain a new and novel idea for many of the motor carriers. The bars depict total applications, while the

line represents the number of Internet transactions. However, as general access to the Internet and experience with Internet transactions increase, the use of the Internet for credentialing transactions will undoubtedly also continue to increase.

EXHIBIT 2
Pennsylvania APRAS User Statistics



5.0 IMPLEMENTATION PLAN

5.1 PROGRAMMATIC

5.1.1 Procurement Management Plan

The implementation of the EOSS represents some very unique challenges for the state. The technical development, rollout, and operation of a first-of-its-kind system—one that simultaneously serves the needs of multiple agencies—will require uncommon levels of cooperation and commitment across the stakeholder body. The procurement process must be designed to accommodate the likelihood that multiple funding sources will be required, and that revenue and responsibility for operations be designated and committed in advance for a period of at least three years.

Based on discussions held during the focus group sessions and stakeholder workshop, there appear to be two basic options for "procuring" the functionality desired by the agencies in Illinois, and carriers that base operations there. The first option entails the procurement of services, hardware, and software for a system that will be operated and maintained by representatives from one of the agencies. The second major option would require the identification of a suitable third-party provider that would take on the responsibility and risk for development, deployment, and operations and maintenance (O&M) of the system, to whom the agencies would pay transaction fees. The pros and cons for different iterations and hosting bodies are highlighted later in this document. A discussion of the implications of and requirements for the two major procurement options is offered here.

5.1.1.1 State-Owned System

The first of the two options, referred to here as a "State-Owned System," would require a more traditional systems procurement process coordinated by the Illinois Department of Central Management Services. The most appropriate methodology for this type of procurement would be a two-stage process that would involve the procurement of contractor services for the development of a detailed design specification, followed by system development and deployment in accordance with the agreed-upon specification, and a negotiated price.

The process would begin with the development of a request for proposals that would specify, to the extent possible, the scope of work to be completed, with the award for development and deployment contingent upon satisfactory completion of the design specification, and agreement on costs and fees to complete the system. This procurement method is relatively common, having become popular for ITS deployment. It allows the state a high degree of flexibility in selecting and managing a

contractor throughout the procurement, and offers the contractor an acceptable level of risk.

In return for a substantial up-front investment, the procurement of a state-owned solution offers the state the ability to have a system tailored to their specific needs, and the option of making modifications as desired without requiring a third party. Of course, the financial responsibility for owning and operating a state-owned system will also fall upon the agencies.

Under the state-owned option, a single agency would be responsible for contracting for the development and deployment services, most likely with financial and advisory support provided by the others. A single agency would also assume responsibility for housing, operating, and maintaining the system. This may be the same agency, or a different agency, depending upon the desires of the agency leaders, and the degree of flexibility in current Illinois law. Valid arguments can be made for each agency to host the system, based upon available resources (organizational and financial) and projected data traffic.

Perhaps the most challenging aspect of the procurement will be the identification and commitment of the necessary funding. Currently, the most attractive option for the bulk of the funds is the Transportation Regulatory Fund. Managed by the Commerce Commission, the Fund currently has a surplus, and is much more accessible then either the General Revenue Fund or the Road Fund. Opportunities to supplement these funds with additional funds are relatively limited at this time. While the deployment of such a system, coupled with other state efforts to deploy ITS/CVO, would likely qualify the state for federal funds, such funds are extremely limited. There may be funds available through earmarks designated for the IDOT ITS Project Office, which has been concentrating its efforts on ITS implementation in the Gary-Chicago-Milwaukee (GCM) Corridor. Finally, discussions with representatives of the Federal Motor Carrier Safety Administration (FMCSA) indicated that there might be other alternatives that could provide potential funds, once this plan is completed and made available for review.

Another option would be to secure funds from private sources within the trucking industry. This could take the form of a public/private partnership, where cash or in-kind contributions are provided, or user fees, assessed to carrier users of the system. However, neither of these options is very attractive, since they are not likely to meet with favor within the carrier community. Partnerships are typically formed when there is a business interest to be pursued on the part of the private party. In the case of EOSS, since the system will be made available for use by all qualified carriers, there does not appear to be such a business case. As for user fees, these are rarely well accepted by the carrier community, and would probably have the undesired effect of suppressing the level of carrier enrollment.

Should the Transportation Regulatory Fund be targeted as the primary source, each of the other agencies (DOR and SOS) would be asked to provide in-kind contributions, in the form of labor, materials, or funds. The mechanism for accommodating this type of arrangement would be an interagency agreement that specifies the form and amount of contribution from each of the signatory agencies, and essentially guarantees the level of commitment necessary to achieve the terms of the agreement.

The remaining concern is the degree to which current funding sources can be used for operations and maintenance of the system. Due to the highly automated nature of the system, operations expenses should be relatively manageable, on the order of ten to fifteen percent of the costs associated with development and deployment. Nonetheless, an ongoing source of funds needs to be identified. It would appear that, should the SOS be deemed the most appropriate hosting location, at least a portion of the costs could be absorbed by savings associated with a reduced need to retain temporary staff support during renewal. An additional portion could be offset through the training of current SOS staff to perform system operation and routine troubleshooting and maintenance.

5.1.1.2 Third-Party System

The other primary option is the use of a third-party solution. Such a solution involves the development and deployment of a system, by a private firm, for the purpose of assisting a state in performing its administrative functions. The private firm then assesses use fees to states and/or carrier users, based on the degree of use. This option has some very obvious positive characteristics. The first is that the state has no up-front investment to make in order to roll out the desired functionality. Further responsibility for operations, maintenance, and upgrades lies with the third party provider.

Such an approach also has its drawbacks. The most obvious is that, because the software applications, and the hardware on which it resides, are owned and operated by a private entity, it may be designed to accommodate the majority of needs of several states, while not fully meeting any, and changes are likely to end up costing users in some manner. Perhaps the most limiting aspect, however, is that the incentive for development and operation of such a system must exist within the market. Without sufficient financial opportunity, such a system will either not be fielded, or will not be self-supported well enough for continued operation. In order for such a commercial endeavor to be successful, users must be assessed fees that provide adequate financial support, without being so high as to limit user appeal.

Because the state will not actually own the applications or hardware under this option, procurement is limited to that which is necessary to allocate funds and remit payment to the selected service provider. This is provided that the state chooses to bear some financial burden for the system's use. If the third party provider chooses to assess fees

to the carrier users exclusively, obviously the state would not need to undertake any procurement action.

The state may choose to enter into a cost-sharing, public/private partnership with a third party provider. Under this scenario, the state would enter into a written agreement with a provider whereby the state would agree that the solution developed and fielded by the provider would be the only approved method for electronic credentialing, and that the provider would be reimbursed on a per transaction basis. Whether these fees are assessed to the state, or to carrier customers, they must still be sufficient to ensure the long-term viability of the system.

Under a partnership agreement, the state would most likely incur some cost for system development. This may come in the form of cash, and/or in-kind contribution. Typically, under a partnership arrangement, the state would provide a combination of funds and labor, perhaps gaining in return some period of reduced use fees. The specific terms and conditions of such an arrangement would have to be negotiated with the third party provider, a process that has proven to sometimes be quite lengthy and difficult in public/private partnership arrangements. If a partnership approach is chosen, the state may wish to procure the services of an independent project manager to act on the state's behalf in overseeing the work of the third party provider. This relationship would take the form of a standard contract for services, to be executed over the period of system development, roll-out, and a period of system operation sufficient to work through any outstanding system performance issues.

5.1.1.3 Carrier Recruitment

Regardless of the solution chosen, the state would benefit from the active recruitment of carrier users. To accomplish this, the state should employ a two-staged approach. Because an initial pilot period, during which both the state and its carrier customers become familiar with the function and nuance of the system, would be mutually beneficial, the state should first recruit those carriers with whom it has a solid, open working relationship. Such an approach will allow any kinks in the system to be identified and corrected prior to wider release. Doing so will also facilitate the orientation process, and help to identify best practices for system use by the larger carrier population. The pilot period should last approximately three months, and an additional three months should be programmed for system remediation and refinement.

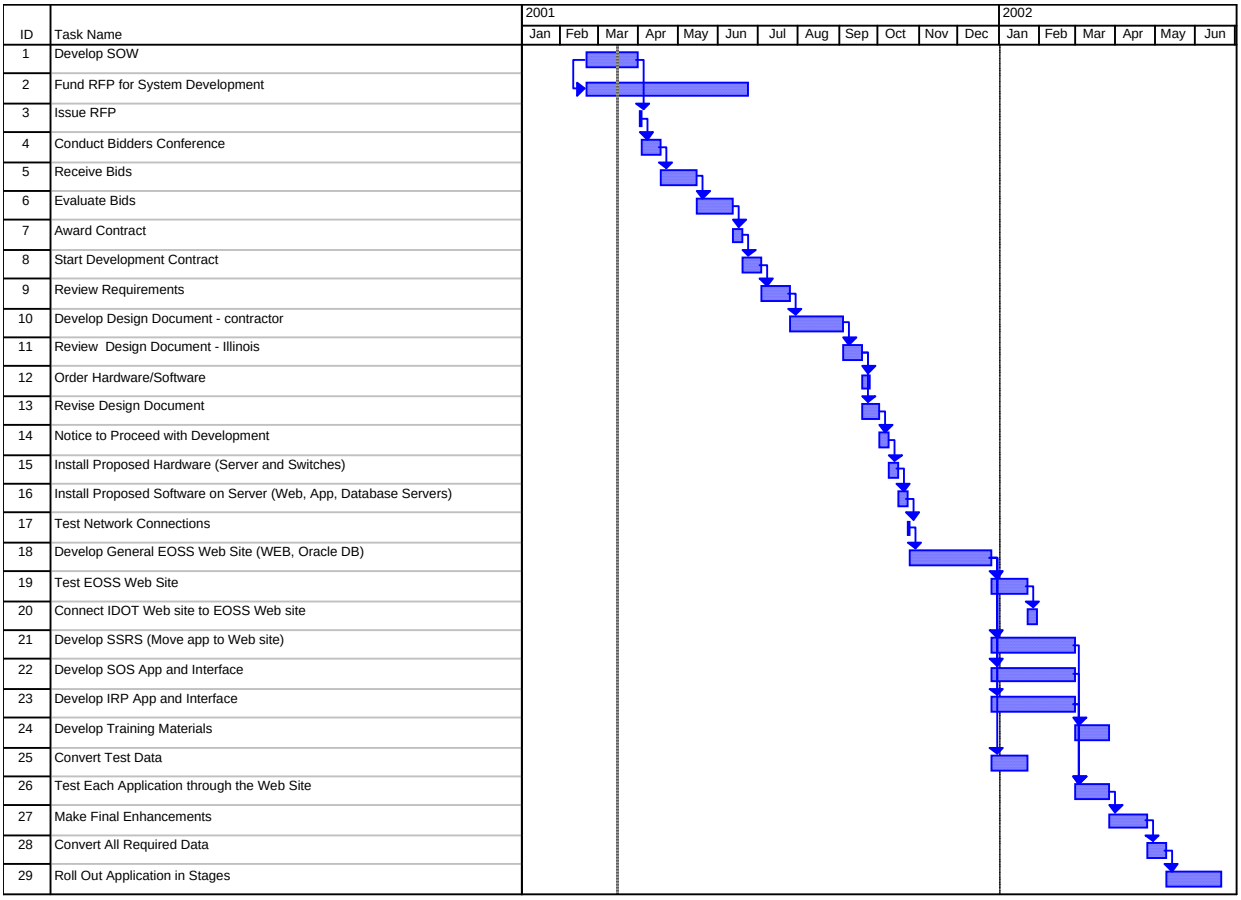
Once the pilot and refinement is complete, the state should seek to actively recruit carriers from the larger population, first through written correspondence to carriers that currently register in the state, then on a wider scale through print media. The state should also conduct public education sessions, perhaps in conjunction with trade

shows, where system functionality can be demonstrated and potential users can ask questions about its use.

5.1.2 Proposed Schedule

The scheduled proposed for the EOSS design, development and implementation is illustrated in Exhibit 3.

EXHIBIT 3
Proposed EOSS Schedule



5.1.3 Potential Funding Sources To Support EOSS and ITS/CVO Development

As with any new system implementation, the EOSS will require significant levels of funding to complete design and development, and to conduct ongoing operations and maintenance. The up-front investment and ongoing support requirements associated with a state-owned solution will necessitate the identification of funding sources both during system implementation, and in the out years. The project team examined a number of potential sources, some of which are more likely than others to be accessible for the EOSS program. The sections that follow offer brief overviews of these options.

5.1.3.1 National Corridor Planning and Development Program (NCPD)

The National Corridor Planning and Development Program (NCPD) provides funds for the planning, design, construction and related activities of projects that develop the 43 corridors identified by Congress in legislation passed in 1991, 1993, 1995, and 1998 (TEA-21) and of projects related to some additional corridors. Further information on the National Corridor Planning and Development Program can be accessed at the following web address: "http://www.fhwa.dot.gov/hep10/corbor/corbor.html."

5.1.3.2 Statewide Planning Process (Access to Federal Funds)

States' transportation planning process allocates Federal-Aid funds, including the following funds provided by the Federal Highway Administration (FHWA): National Highway System (NHS), Surface Transportation Program (STP), Congestion Mitigation and Air Quality Improvement Program (CMAQ), and State Planning and Research (SPR). The National Highway Traffic Safety Administration (NHTSA) is the grant provider for State and Community Highway Safety Grants (402 Program). FHWA Federal-Aid funds can be used for Safety Assurance, Electronic Screening and Credential Administration. ITS/CVO projects must be included in the Statewide Transportation Improvement Program (STIP) to be eligible recipients of Federal-Aid funds. Potential uses of the funds are in the ITS/CVO program areas of Safety Assurance and Electronic Screening with limited potential use in the program area of Credential Administration. As an example, Connecticut deployed electronic screening capabilities using CMAQ funds.

Further information on Illinois' Statewide Program Planning Process can be obtained at: http://dot.state.il.us/idotnews.html. Further information on Illinois's Statewide Transportation Improvement Program (STIP) can be obtained at: http://dot.state.il.us/internet2.html.

5.1.3.3 Illinois Department of Transportation (IDOT) ITS Program Office

TEA-21 established the ITS Deployment Program to facilitate the integrated deployment of Intelligent Transportation Systems (ITS) in the United States. The ITS Deployment Program includes two components. The two components are Commercial Vehicle ITS Infrastructure Deployment component, defined in Section 5209, and ITS Integration component, defined in Section 5208. States have received Commercial Vehicle ITS Infrastructure Deployment component funds through designations contained in recent U.S. DOT Appropriations Acts.

Based upon the results of this EOSS Business Plan, the IDOT ITS Program Office may consider including a project to develop and implement EOSS as part of IDOT's federal FY 2002 earmarking request. IDOT will begin preparation of their FY 2002 program in March 2001. If federal FY 2002 funds were awarded for EOSS, the monies would not be

available for expenditure until the second half of calendar year 2002. The IDOT ITS Office is also pursuing an expanded state-only ITS Program for state FY 2002. Included in this program is $500,000 for CVO-related initiatives. These funds could be available for obligation as early as July 2001.

5.1.3.4 Transportation Regulatory Fund

A possible source of funding for web site development is the Transportation Regulatory Fund (TRF) which is managed and controlled by the Illinois Commerce Commission. The fund is defined as: All fees, penalties (other than criminal penalties) or monies collected in settlement of enforcement proceedings, taxes, and other monies collected or which are transferred, appropriated or reimbursed to the Commission for the purpose of administering and enforcing the Illinois Commercial Transportation Law, shall be promptly paid into a special fund in the State treasury known as the Transportation Regulatory Fund.

The Illinois Commerce Commission must approve the use of the Transportation Regulatory Fund as the source of funding for development of an electronic one-stop web site. The EOSS Steering Committee may choose to recommend to the Commission that Transportation Regulatory Fund dollars be used to support development of the web site. In order to reflect a high level of support, the request would have to be supported by members of the Illinois commercial vehicle industry and all EOSS participating regulatory agencies. The support should also be substantiated by the submittal of letters of support for the EOSS program and should be directed to the Commerce Commission. Agencies should also support the funding request by offering in-kind resources to the project and by specifying the priority level of support the project has within each Agency.

5.1.3.5 ITS/CVO Mainstreaming Program

The mainstreaming program is a Federal Motor Carrier Safety Administration (FMCSA) initiative designed to foster and support ITS/CVO deployment and to communicate ITS/CVO initiatives to all stakeholders at both the state and regional levels. One of the Mainstreaming program's primary deliverables is the development of a State ITS/CVO business plan. Potential mainstreaming program funds could be used to assist Illinois in the development of an ITS/CVO business plan to include the other ITS/CVO program areas of Safety Assurance, Electronic Screening, and Carrier Operations. Illinois would enter into an ITS Partnership Agreement with the FMCSA.

5.1.3.6 CVISN Deployment Workshop Grant

This grant provides funding to assist the state with travel and other expenses that the State's CVISN Program team would incur while successfully participating in the CVISN Deployment Workshops. Illinois would enter into an ITS Partnership Agreement with the FMCSA.

5.1.3.7 Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) ITS Service Plan

The ITS Service Plan provides technical support in metropolitan areas or statewide efforts to enhance transportation operations through improved near-term deployment and integration of ITS technologies and applications. Service Plan activities include Scanning Tours/Reviews (CVISN state site visits), Training, and Architecture Development.

An FY2001 Service Plan was submitted to assist Illinois concerning its statewide ITS/CVO efforts. Illinois was awarded $25,000 for activities which includes 1) conducting an ITS/CVO scanning tour, 2) attending an ITS/CVO Deployment Forum, and 3) Illinois' potential participation in the CVISN Deployment Workshop program.

Other Service Plan funding could be available with future Service Plan requests. A Service Plan is developed and implemented through a collaborative effort among the FHWA Division Offices, FHWA Resource Centers, FTA Regional Offices, and State/local transportation agencies. A formal evaluation process is used to review and select the most promising target-funded Service Plans.

5.2 TECHNICAL

5.2.1 Host Site Recommendations

The Web site can be situated at a number of locations within the state or externally at a contractor site. The following sections identify the Advantages and Disadvantages of different site locations for the Web Site.

5.2.1.1 Hosting at DOR

- Advantages
  - If they issue the PIN sequence, they control the viability/accuracy of the demographics database.
  - DOR has the highest level of privacy – by hosting, DOR's current level of privacy requirements will be maintained.
- Disadvantages

- ♦ Problems must be resolved at the DOR Site.
- ♦ Heavy SOS transmission of IRP data.
- ♦ Would be custodian of non-revenue code for SSRS.

5.2.1.2 Hosting at ILCC

- Advantages
  - ♦ Modification of SSRS code would be done internally as opposed to submitting a change modification request to other sites.
  - ♦ CDPD technology already installed at ICC.

- Disadvantages
  - ♦ Problems must be resolved at the ICC Site.
  - ♦ Heavy SOS transmission of IRP data.
  - ♦ Uncertainty of SSRS continuity.

5.2.1.3 Hosting at SOS

- Advantages
  Transmission of heavy IRP data would be a local transfer.

- Disadvantages
  - ♦ Problems must be resolved at the SOS Site.
  - ♦ Would be custodian of non-revenue code for SSRS.

5.2.1.4 Hosting at Third Party – Communication only

Same development effort would be required.

- Advantages
  - ♦ No site would have to provide space for hosting.
  - ♦ Daily maintenance – backups, recovery, and maintenance of communications links.
  - ♦ Hosting site would provide hardware – if system growing then host site would be responsible to upgrade equipment.

- Disadvantages
  - ♦ All data would have to travel a further distance.

5.2.1.5 Hosting at Third Party – Development and Communications

Use industry software at a third party site – Software vendors such as IDT and Polk systems offer Web Sites that currently have web applications available to perform most of the required functionality that has been identified for the EOSS web site.

- Advantages
  - Would significantly reduce development costs.
  - The site would be supported by proven code.
  - Illinois would benefit from other improvements in design requested by others.
  - Pay based on transaction volume from each agency/carrier- that could be recovered from the carriers.

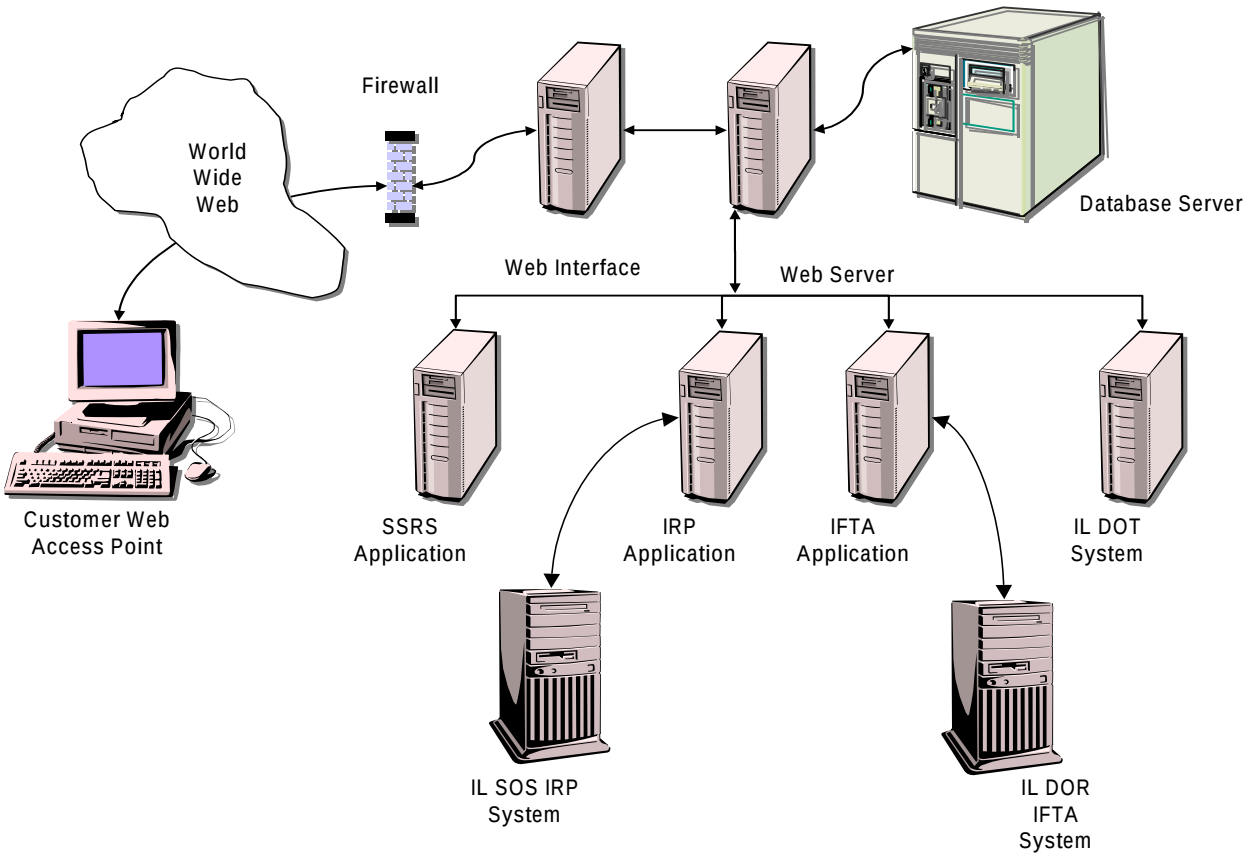
- Disadvantages
  - Less input in the shell functionality.
  - May not be able to get specific changes to the system.
  - Modifications would be made on a timetable outside of the states immediate control.
  - Concerns that system elements could be considered proprietary.

5.2.2 Architecture Overview

The new system will be designed to allow anyone with proper credentials access to the system. This allows carriers to update fleet information as it changes, and to get information about credentialing requirements. The data will also be available to the state agencies for processing. The architecture shown in Exhibit 4 illustrates the proposed system components and connectivity, which will allow future carrier exchanges of information with the agencies for the administration of credentials, permits, and fuel tax filings via a single web "portal". Carriers or their agents will be able to apply for and pay for their credentials and file quarterly returns on-line.

The EOSS as currently envisioned will contain a central server (located at a site to be determined) that will host a set of databases and applications that interface with their primary organizations. The proposed solution is to place the server at the agency with the largest number of heavy users to localize traffic on the LAN. This design would require the installation of Point-to-Point T1's from each remote agency to the hosting server. This would provide a scalable solution with full control of the traffic over these connections. With a single T1, a 3MB connection could be provided to each agency with a minimum hardware compression rate of 2.1. Multiple T1's can be aggregated with the Multi-Link PPP to provide 3MB bandwidth increments. With policy based routing features, this will guarantee bandwidth and even guarantee that these new links will only be used by the new database server application(s). The system would be protected with a single firewall.

EXHIBIT 4
Illinois EOSS Conceptual Architecture



This system will take information from the carrier via the web interface. It will also require them to input an action for this data. This information will then be stored on the database, and the set of data needed to complete the action will be aggregated and sent to the agency for processing (some over night, some online). The agencies will then store the result of their process on the database and send out an email message for the carrier to retrieve billing and certificate information from the web interface.

The EOSS will consist of the following hardware/software components:

- Web server—the proposed web server is an IBM model P or Z series. The server can be fitted with up to 12 processors. Initial configuration should be able to handle 30 percent of the maximum load of 500 concurrent transactions. A 30 percent load would require a four-processor configuration with 48 gigabytes of disk space.

- Web Interface—the Web Interface will consist of a main screen that allow either public or the carrier access to the web site. The public will be able to view public transportation related information. Carriers will be able to enter demographic information and request a username and pin number for access to the EOSS applications. Once a carrier has their username and pin number then they will be able to select one of the four applications from a menu.

- Database server—the proposed database server is an IBM model P or Z series. The server can be fitted with up to 12 processors. A 30 percent load would require a four-processor configuration with 72 gigabytes of disk space. The database server will have three physical databases resident:
  - Demographic DB—will contain general information on each of the carriers. This information will be shared with each of the application systems.
  - SSRS DB—The SSRS will only reside on the database server, it will be migrated from the existing ILCC file server.
  - IFTA DB—A copy of the IFTA database will be created on the database server. Daily transactions will be processed against the database server. At night the transactions will be uploaded to the DOR server where they will be processed and a flat file will be generated for downloading to the database server.
  - IRP DB—The IRP database will not reside on the database server. A duplicate of the official IRP database will be located on the SOS mainframe. The IRP software on the web site will update the IRP database in an online mode. At night the daily transaction from the duplicate database will be processed in a batch mode on the official database where all registration and fees will be processed. After the nightly processing the duplicate database will be updated for processing the following day.

- Database Software—The database will most likely require an Oracle software license. This will use the Oracle application tools providing form and report capabilities. This will be most useful in development of the main screen (generic application) and allows each agency to use the data they extract in the format they require. The approximate cost is difficult to estimate, but the Oracle software license will be around $500,000 per year for a 500 user /12 server license. Using Oracle will require more sophisticated personnel to administer and maintain the database.

  An alternative to Oracle is Sybase database software. It does not have the wide range of tools for development and administration of the database, but it provides the power to drive the multiple databases within the Web server and its cost is significantly less than Oracle. A 12-server license would cost $228,000.

5.2.3 EOSS Cost Model

Based on the architecture defined above a cost estimate was developed for the design, development and implementation of the EOSS web site. The estimate is based on 30 percent of the available population using the system. The estimated cost for implementing EOSS consists of the following elements:

- Design of 5 modules (IFTA, IRP, SSRS, Web Database, Web Application) - $480,000
- Development of the 5 modules - $1,360,000
- Web and Database servers (hardware/software) at 30% utilization - $ 836,000
- Communications equipment and lines - $ 360,000
- Total cost - $3,036,000

The yearly O&M cost for maintaining the system consisting of a dedicated staff of one system administrator and one developer to make changes to the system, along with the hardware maintenance and software yearly license, would require a yearly total of $405,250.

It should be noted that these figures are based on the use of a robust design that uses Oracle database software. Should the state prefer, a less costly alternative would be the use of Sybase. It should also be noted that, over the course of the project, technology would continue to advance, bringing potentially lower costs and better solutions.

5.3 INSTITUTIONAL

5.3.1 Regulatory Issues

5.3.1.1 Use of Electronic Signatures in EOSS Processing

In 1998, the Illinois General Assembly passed the Illinois Electronic Commerce Act (5 ILCS 175/5-101 et seq.) which became effective on July 1, 1999. The Act was the result of the work of the Commission on Electronic Commerce and Crime established by the Illinois Attorney General in 1996. The Act provides that where a rule of law requires information to be "written" or "in writing" or "signed," an electronic record or electronic signature satisfies that rule of law. For the purposes of EOSS, the Act states that its purpose is "To facilitate and promote electronic commerce . . ." [and] to facilitate electronic filing of documents with State and local government agencies, and promote efficient delivery of government services by means of reliable electronic records." A "record" is defined as "information that is inscribed, stored, or otherwise fixed on a tangible medium or that is stored in an electronic or other medium and is retrievable in a perceivable form."

The Act does not apply in situations that would be "clearly inconsistent with the manifest intent of the lawmaking body . . . ." It does not apply to records such as,

"…negotiable instruments or other instruments of title, wherein possession of the instrument is deemed to confer title unless an electronic version of such record is created, stored, and transferred in a manner that allows for the existence of only one unique, identifiable, and unalterable original . . . that can be possessed by only one person, and which cannot be copied except in a form that is readily identifiable as a copy."

5.3.1.2 Recoverable Expenses Through Web Site Advertising

We find no record, in Illinois statutes, of any prohibition that would prevent an agency from recovering expenses by use of web site advertising. Two issues come to mind that would impact this approach. First, the host agency would probably have to put the advertising out to competitive bid since they would in fact be "selling" space on a government asset. Also, legislation would have to be written that would specify where the money generated would go. Without legislation, the proceeds would probably go into the General Revenue Fund and not be available to the host agency that generated the revenue.

5.3.1.3 Purchase and Maintenance of Hardware Assets

During the State Agency workshop discussions, the participants discussed various alternatives of meeting ongoing EOSS hardware and software expenses. From a legal perspective, if one agency were to purchase computer equipment which would be used by other agencies, the purchasing agency would have to enter into interagency agreements with other participating agencies to define who owns the equipment and who is responsible for its maintenance.

5.3.2 Legal/Liability Issues

Because each agency participating in the EOSS web site will continue to receive and process the information each requires to fulfill its mandated function, there will be no threat that the EOSS function will change or increase the legal liability of any agency. In order to maintain document integrity, each agency should continue to monitor and audit the accuracy of the information it receives.

6.0 RECOMMENDATIONS AND NEXT STEPS

The project team believes that an effective approach to moving forward with the creation of a centralized electronic credentialing capability for Illinois' commercial vehicle stakeholders includes the establishment of a project management team. This team will both proactively facilitate EOSS decision-making, and manage the overall design and implementation efforts of the project. The EOSS Steering Committee should continue to encourage positive interagency cooperation, particularly at the executive level, and provide project oversight of the project management proceedings. The Steering Committee should also require the development of specific project management responsibilities, a project schedule, and a proposed budget for the management, design, and implementation of the EOSS. These activities are further discussed in the sections that follow.

6.1 Project Management

The findings gathered during the stakeholder interviews, focus group sessions, and workshop, suggest that a number of steps need to be taken to maintain the forward momentum of this project. They are also important to support timely development of an interactive system that is responsive to the needs of the Illinois commercial vehicle industry. Those steps include overall project management responsibilities, detailed design activities, and implementation tasks.

Effective project management is central to the successful delivery of any project. As such, the use of structured project management methodologies should feature prominently in the overall EOSS project life cycle. The primary responsibility of a project manager is to direct the production of an interactive publicly accessible web credentialing system capable of achieving the functionality desired by all stakeholders. This entails ensuring that the project produces the required interfaces, to the required standards of quality, and within the specified constraints of time and cost. More specifically, project management tasks should include:

a) Management of the development and delivery of the EOSS product
b) Management of the project team
c) Planning and monitoring of the project
d) Preparing and coordinating any plans with the EOSS Steering Committee
e) Liaison with any related projects to ensure that lessons learned in similar state implementations are effectively leveraged
f) Monitoring overall progress and use of resources, and initiation of corrective action, where necessary, within the tolerances set by the client
g) Management of business and project risks
h) Implementation change control and any required Configuration Management procedures

i) Reporting to the EOSS Steering Committee at the agreed frequencies
j) Liaison with the client to ensure the overall direction and integrity of the project
k) Compilation of required reports
l) Preparation of any recommendations for follow-on actions after the project closes
m) Accumulation of advice and support required for the management, planning and control of the project
n) Responsibility for project administration.

6.2 Detailed Design

The process of identifying the technical design for the State of Illinois will be critical to determining the scope of the project. The detailed design team should meet with key State of Illinois technical experts to gather a complete set of technical specifications. The input of these experts and the documentation that they can provide will assist in determining the design of the EOSS, and will guide the preparation of time and resource estimates required to develop a robust electronic credentialing capability.

The team should establish a process for integrating technical specifications with their functional requirements. The team should begin by creating a matrix of technical specifications based on the output of discussions with State of Illinois staff. The team should then hold a series of technical meetings to determine specific requirements for the EOSS application. These meetings will be with the technical leads from the team and the State of Illinois legacy system experts. It is essential that the primary technical stakeholders participate in these workshops. After each workshop, the detailed design team will document the new requirements. The Steering Committee should then review and approve the requirements. Based on the final requirements, the design team will design all the system components, to include all legacy system interfaces (LSIs), application coding schemes, and detailed technical architecture.

6.3 Development and Implementation

After the business requirements, technical requirements, and design have been established and the State of Illinois has approved them, the team should begin planning the development of the system components. It is important to note that only those components directly related to the integration and deployment of the IFTA, SSRS, and IRP systems will be built. However, the EOSS web site should also be designed to incorporate other legacy system interfaces such as IL DOT's over-dimensional permitting functionality.

In the development stage, all structures and components of the application will be coded and built according to the development plan, which the team will assemble at the

start of the stage. The EOSS can be implemented in stages as the components are developed. Initially, a Web site can be established and used as an information center for dissemination of information to the public. Agency forms and general information can quickly be put on the site for access by the public. The individual agency components can then be added as they are developed and tested.

APPENDIX
Process Maps
Outreach Article